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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/769,823	01/24/2001	Kurt R. Zimmerman	A-68861/AJT/LM	5178

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[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

3662

DATE MAILED: 10/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/769,823	ZIMMERMAN ET AL.
	Examiner	Art Unit
	Gregory C. Issing	3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 07 August 2002.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-16 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 8/7/02 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.

4) Interview Summary (PTO-413) Paper No(s). _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____.

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite due to language that fails to clearly and distinctly set forth the limitations of the claim with a degree of clarity. The language “such that immediate carrier cycle ambiguity resolution is possible” and “an unambiguous precise measurement . . . can be derived” fails to provide definite language to define the metes and bounds of the claim.

In claim 1, it is unclear what the “two receivers” represent, what the range between them represents and how they relate to the positioning system. Lines 7-13 are indefinite since it is not clear how “immediate carrier cycle ambiguity resolution is possible” since the carrier phase measurement is only performed after a code phase estimate has been derived, wherein the code phase estimate is an average of values of code phases, according to the specification.

The claim language is required to correspond to language used in the specification. In the instant case, the claims define the carrier signals being modulated in a Bipolar Phase Shift Key manner. However, the original specification fails to distinctly set forth the use of such language. Even though this is the conventional manner in which GPS operates, the claim language should still correspond to the language in the specification.

Claim 13 is not understood since it is not clear *how a receiver comprises the signal plan of claim 1.*

Claim 14 is not understood since it is not clear *how a pseudolite transmitter comprises the signal plan of claim 1.*

Claim 16 is indefinite since it is not clear *how a method comprises a signal plan, particularly the signal plan of claim 1.* Additionally, the language “forming a probability a density function” is not properly presented.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1, lines 7-13 are non-enabling. The specification fails to clearly enable a skilled artisan to provide immediate carrier cycle ambiguity resolution on the basis of the choice of the carrier and spreading codes.

Claim 13 is insufficiently disclosed with respect to how to generate a precise position solution from a single time sample of said phase measurements.

5. The disclosure is objected to because of the following informalities:

Equation (2) is not understood, on page 15. On page 15, lines 25-26, the previously indicated language remains unclear. The equivalent use of “T” and “ τ ” is erroneous on pages 15-16.

Appropriate correction is required.

6. The corrected or substitute drawings were received on 08/07/02. These drawings are not approved. There are no changes shown in red; in Figure 1, there are illegible descriptions in the shaded portions, and Figure 3 has major changes therein.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Longaker et al.

Longaker et al teaches the claimed positioning system, as best understood, including a plurality of pseudolites GT_{1-N}, a reference station (base station) 12, and a communication link CLB 48. The positioning system includes a signal plan comprising a plurality of radio frequency carriers including GPS L1 and L2 (84, 86, 88, 90) as well as link a CLGT which can use RF and ISM unlicensed bands. Each carrier is modulated with navigation data descriptive of the location of the transmitter by a PN spreading code. The language of the claim “wherein said modulated carrier signals are further designed to provide a significant range of operation, meaning they may

be utilized throughout the majority of the volume encompassed by said plurality of pseudolite transmitters" does not provide any limitative properties and is therefore inherent in the system of Longaker since the purpose is to provide coverage in a predetermined area and whatever that area is met by the claim language. Differential correction data is provided by the base station, i.e., the reference station. Longaker et al disclose use of signals from the ground transmitters alone or in concert with signals from SATPS transmitters. The system, satellite transmitters, pseudolite transmitters, reference station and user receiver are each disclosed and used to provide navigation data for a user within the area covered by the positioning system.

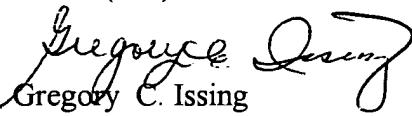
9. Claims 1-16 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Small.
10. Small discloses the claimed positioning system, as best understood, including a plurality of GNSS transmitters, a plurality of pseudolite transmitters, a reference station providing differential corrections and a user. The pseudolite transmitters operate at multiple frequencies in order to provide wide-laning which allows single epoch carrier phase integer ambiguity resolution.
11. Claims 1, 4, 6, 7, 9-12, and 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Stone et al.
Stone et al disclose the use of multiple frequency pseudolites in a positioning system in order to provide additional availability, accuracy and carrier phase integer initialization.
12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).
Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (703)-306-4156. The examiner can normally be reached on Mon-Thurs 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarca can be reached on (703)-306-4171. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9326 for regular communications and (703) 872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


Gregory C. Issing
Primary Examiner
Art Unit 3662